

From acceptance to usage

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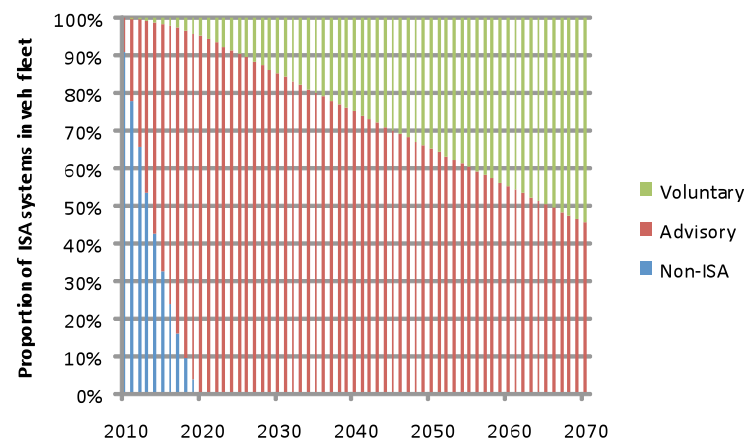


- Among the tasks:
 - Perform cost-benefit analyses on introducing and operating ISA
 - Advise how a greater take-up and usage of ISA on a voluntary basis can be encouraged

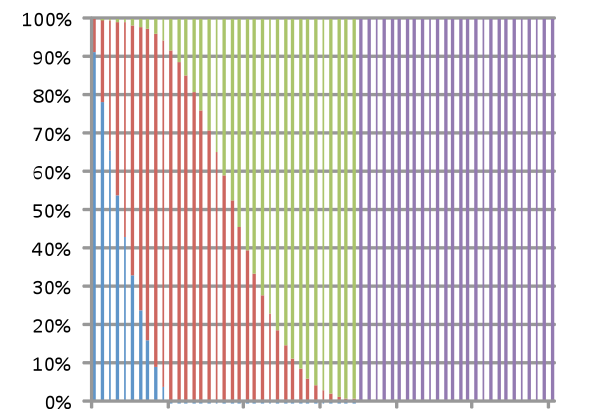
- We had to create (invent?) scenarios for future adoption and usage
- Where should one find the evidence base to do this?
- What theoretical approach should one adopt?



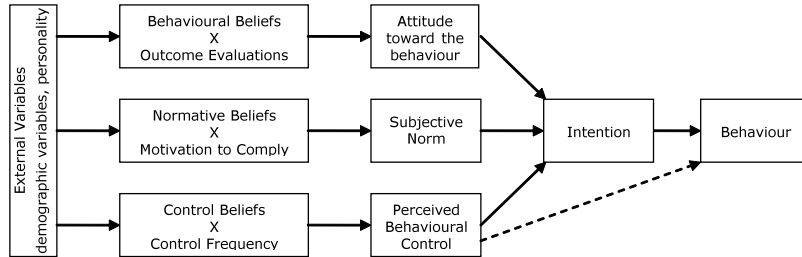
Predicted ISA penetration under the Market Driven scenario



Predicted ISA penetration under the Authority Driven scenario

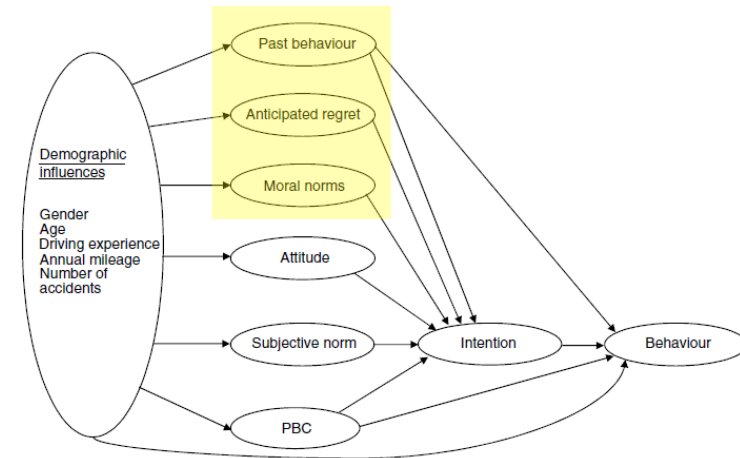


The TPB (Ajzen, 1991)

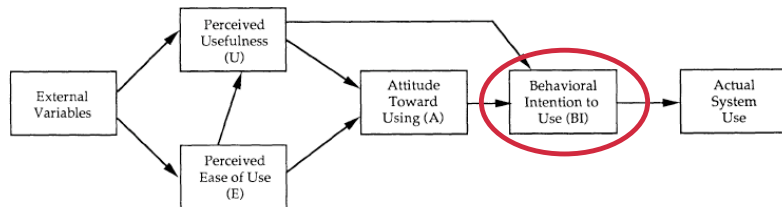


Where's the "social"?

Extended TPB (Conner et al., 2007)



The Technology Acceptance Model –TAM (Davis, 1989; Davis et al., 1989)



TRA, TPB, Extended TPB and TAM

- All concentrate on the individual
- Largely leave out the social element
 - (even though they are based on social psychology)
- In this regard, Van der Laan et al. (1997) is similar:

My judgements of the (...) system are... (please tick a box on every line)

1	useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	useless
2	pleasant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unpleasant
3	bad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	good
4	nice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	annoying
5	effective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	superfluous
6	irritating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	likeable
7	assisting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	worthless
8	undesirable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	desirable
9	raising alertness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sleep-inducing

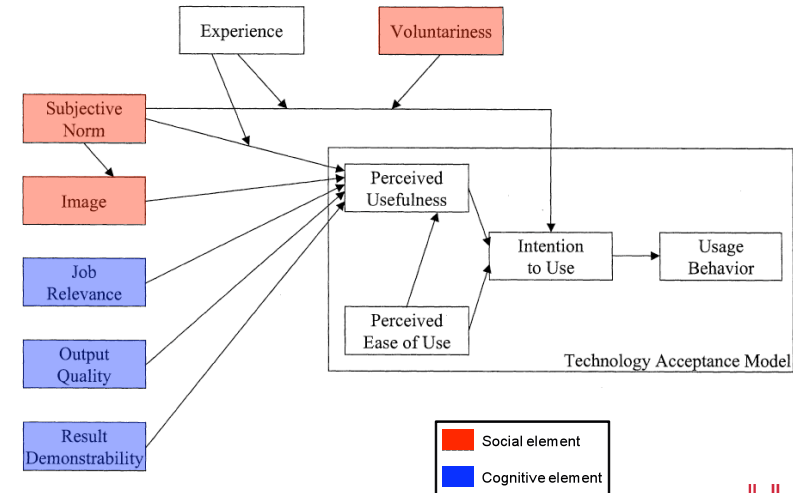
1, 3, 5, 7, 9 = "useful"

TAM results

In empirical studies:

- *Perceived usefulness* has consistently been a strong determinant of usage intentions (standardised regression coefficient ≈ 0.6)
- *Perceived ease of use* has emerged as a less consistent predictor of intention

TAM2 (Venkatesh and Davis, 2000)

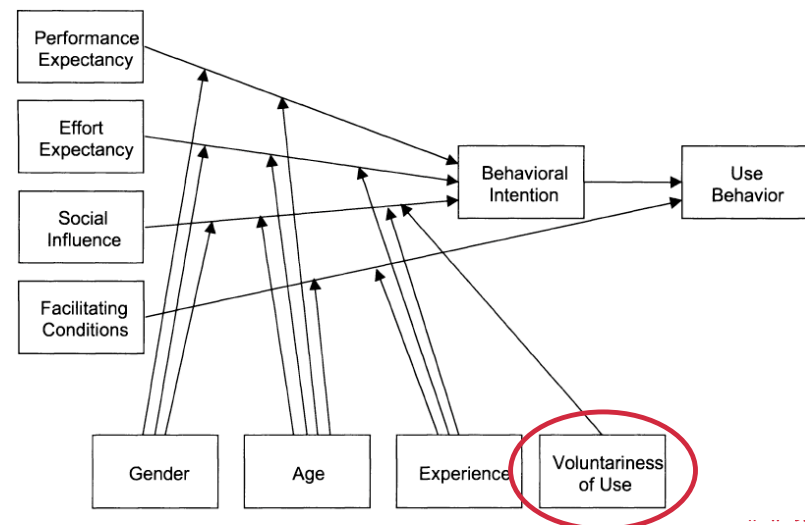


A further refinement – UTAUT (Venkatesh et al., 2003)

Universal Theory of Acceptance and Use of Technology

1. Based on a review which identified 8 prior models
2. A longitudinal validation and comparison of the 8 models was conducted with data from 4 organisations
3. UTAUT was formulated
4. UTAUT was empirically validated on:
 - i. The original data
 - ii. Data from 2 new organisations

UTAUT



Predictive power of UTAUT

- For behavioural intention, overall adjusted R^2 (hierarchical regression) = 0.70
- For behaviour, overall adjusted R^2 (hierarchical regression) = 0.48



Observations on UTAUT

- TRA/TPB has almost vanished
- The **mediating factors** — gender, age, experience and voluntariness have become very important
- Social factors are also now important, i.e.:
 - Social Influence (\approx Subjective Norm)
 - Facilitating Conditions



Definitions

- Social Influence:
“The degree to which an individual perceives that important others believe he or she should use the system”
- Facilitating Conditions:
“The degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system”
(Perceived Behavioural Control in TPB is one element, but FC is more related to the external environment)



Assessment of UTAUT

- + Does consider social elements
- Does not provide an understanding of the dynamics of change in attitudes and behaviour

Venkatesh et al. (2003) acknowledge this as a weakness:

“Future research should investigate other potential constructs such as behavioral expectation or habit in the nomological network. Employing behavioral expectation will help account for anticipated changes in intention and thus shed light even in the early stages of the behavior about the actual likelihood of behavioral performance since intention only captures internal motivations to perform the behavior. Recent evidence suggests that sustained usage behavior may not be the result of deliberated cognitions and are simply routinized or automatic responses to stimuli.”



How do we explain the diffusion and adoption of new technologies?

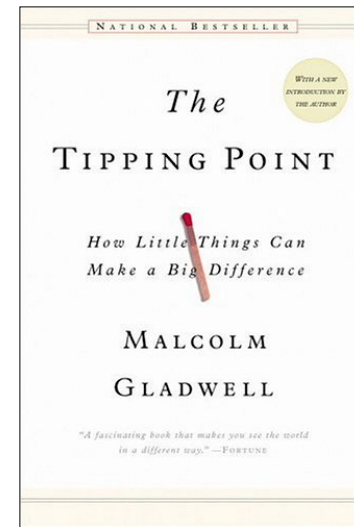
• Example of the mobile phone



From status symbol to social necessity and "utility"



How does the "tipping point" occur?



Conclusions

- Almost all the work on TAM, TAM2 and UTAUT has been done in the context of IT systems introduced in the workplace
- Even Anglo-Saxon theory is progressing
- The social element in the theory is now much stronger
- Note also the impact of the mediating factors
- What is lacking in this school of thought is a theory of how change in attitudes and behaviour occur
- Can we assimilate elements from the French Social Representation theory?
- Can we use the models in a predictive manner (for future-casting)?
- We need to separate adoption and usage — not just have a fuzzy category of "behaviour"

Thank you for your attention!

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